0.00

0.00

120

QC

Quality Control

QC8- Inspect parts - second check

Memo

on 13/04/15 81 8

											DQA:	Date	2:
NCR:	⁄es	/ No				WORK ORDER NON	-COI	VFOR	MANCE / UPDATE		•		
										(QA Closed:	Date	
Nork Orde	or.					DISPOSITION			AGAINS	T DEP	ARTMENT	PROCESS	
VOIR OTAL						Rework	\neg		Skid-tube Crosstube	e		Water Jet	Engineering
Part N	١o.					Scrap		1	Machining Small Fal	b 🔲	Pro	d. Eng. Coor.	Quality
						Use-as-is		Thern	noforming Finishin	g	Rec/Stor	e/Packaging	Other
NCR I	۱о.					Work Order Update			Large Fab Composite	e 💹		Supplier	
Root					Desci	ription of work order update		Initial	Action		Sign &		
Cause		Date	Step	Qty		or Non-conformance	Ch	ief Eng	Description		Date	Verification	QC Inspector
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Landi		5			_	General		٦				Г	
	_	Bending			-	Bend	<u> </u>	Grain		1	Ovalized	 -	Pressure/Forced
	_	Centre No	ot Concer	ntric to (D/S -	BOM/Route	-	Hardwa		 	Over/Under	├	Temperature/Cure
		Cracks				Broken/Damaged	<u> </u>	4	ion Incomplete	\vdash	Part Incorre	·	Weld
	_	Crushed/0	Crimped.			Burrs	<u> </u>	-i	tions Incomplete/Unclear	-	Part Lost/M	issing	Wrong Stock Pulled
	L	Cuffs			L	Contamination		4	enance		Part Moved		
		Heat Trea	it			Countersink	<u> </u>	Mislabe			Positioned V	_	- .
		Inspection	n Strip in	Tube	_	Cut Too Short		Misrea	d		Power Loss/	Surge	Other
		Ripples in	Bend			Drill Holes	<u> </u>	Offset		-			
		Torque W	/aves in E	xtrusio	n [Drawing		Out of	Calibration	_			
		Turning S	equence			Finish		Out of	Sequence	-			
		Wave/Tw	ist in Tub	ре	Γ	Folio		Outside	e Dimensions				

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Work Ord		292		*992	992*	,						Page 2
Item ID: Revision ID:	D3121-21 Bolt			Accept	*N900	040	100) * :	Setup	Start Stop	*N:	S1* S2*
Item Name: Start Date: Required Date: Reference:	4/04/13	Start Qty: 40.00 Req'd Qty: 40.00	*40* *40*		Cust Item I Customer:	D:						
Approvals:	Process Plan	n;	Date:	Tooling: SPC (Y/N):		ate:		I	Run	Start Stop	*N *N	R1* R2*
Sequence ID/ Work Center II 130 *130*	D	Operation Description Identify as per dwg & Sto	ock Location:	Set Up/ Run Hours 0.00	Tool ID	Tool#	Plan Code	Accept Qty	Rej Qty		Reject Number	Insp. Stamp
Packaging Packaging		Memo		0.00				-0-1-7			,	13-4-19
140 *140*		QC21- Final Inspection -	Work Order Release	0.00					ſ.	3/4	150	A
QC		Memo		0.00						~~//		

Quality Control

-MV.

											DQA:	Date	•
NCR:	Yes	/ No				WORK ORDER NON-O	COI	NFORM	AANCE / UPDATI	E			
											QA Closed:	Date	
Work Ord	۰.۰					DISPOSITION			A	GAINST DEI	PARTMENT,	PROCESS	
vvork Ordi	ei. -					Rework]		Skid-tube Cro	osstube		Water Jet	Engineering
Part I	No.					Scrap			 	mall Fab	Pro	d. Eng. Coor.	Quality
					_	Use-as-is			~ 	inishing	Rec/Sto	re/Packaging	Other
NCR I	No.					Work Order Update]		Large Fab Cor	mposite		Supplier	
Root			ſ		Descri	ption of work order update		Initial	Action	e	Sign &		
Cause		Date	Step	Qty		or Non-conformance	Ch	nief Eng	Description	n	Date	Verification	QC Inspector
Doc/Data	Ш												
Equip/Tooling	Ш		Ì										
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Material							l						
Setup													·
Other	Ш					•							
Process													
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Training													
Unapproved			<u> </u>								<u> </u>		
						<u> </u>	AUI	LT CATE	GORY				
Landi	ng G	ear		•	·	General		7			1	r-	 1
		Bending				Bend		Grain		<u> </u>	Ovalized	_	Pressure/Forced
		Centre N	ot Conce	ntric to	o/s	BOM/Route		Hardwa	re		Over/Under	tolerance	Temperature/Cure
		Cracks	•			Broken/Damaged		Inspecti	on Incomplete	_	Part Incorre	ct	Weld
		Crushed/	Crimped.			Burrs		Instruct	ions Incomplete/Unclea	ar 📗	Part Lost/M	issing	Wrong Stock Pulled
		Cuffs				Contamination	L	Mainte	nance		Part Moved		
		Heat Trea	at			Countersink		Mislabe	led		Positioned \	Wrong	_
		Inspectio	n Strip in	Tube		Cut Too Short		Misread	İ		Power Loss/	'Surge	Other
		Ripples in	Bend			Drill Holes		Offset					

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Picklist Print

April-05-13 1:13:06 PM

Work Order ID:

99292

Parent Item:

D3121-21

Parent Item Name:

Bolt

Start Date: 4/04/13

Loc Code

Required Date: 4/19/13

Start Qty: 40.00

Required Qty: 40.00

Comments:

IPP A04.02.09New issueKJ/DS

IPP Rev:B ECN 1060 07-11-12 DD verified by:EC

/M303H0.500/ Purchased No 110 f 22.7000 0.0417	nponent Item ID/ Replacement Mfg/ Bin n Name Item ID Purch Item	Primary Last Location Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
303 HEX BAR .500	Turchuscu		110	f	22.7000	0.0417	1.668			

Location Loc Qty 22.7 MAT018 124761 22.7

3H S 13-4-13

Page 1

											DQA:	Date	2:	
NCR:	Yes	/ No				WORK ORDER NON-O	100	VFORM	MANCE / UPDATE					
											QA Closed:	Date		The state of the s
Work Ord	or:					DISPOSITION			AGAI	NST DE	PARTMENT	/PROCESS		
WOIK Ord	ei. -					Rework	1		Skid-tube Crosst	ube	1	Water Jet	Engir	neering
Part I	No.					Scrap	1		Machining Small		Pro	d. Eng. Coor.		Quality
	•				·	Use-as-is		Therm	noforming Finisl	hing	Rec/Stor	re/Packaging		Other
NCR I	No.			 		Work Order Update]		Large Fab Compo	site]	Supplier		
Root					Descri	ption of work order update		Initial	Action	<u> </u>	Sign &			
Cause		Date	Step	Qty	C	or Non-conformance	Ch	nief Eng	Description		Date	Verification	QC	Inspector
Doc/Data	Ш													
Equip/Tooling														
Operator														
Material			1				ŀ							
Setup				•										
Other	Ш													
Process						•								
Supplier			}									1		
Training														
Unapproved													_L	
<u></u>						` F.	AUL	T CATE	GORY					
Landi	ng G	Gear				General		7		_	7	_	_	
		Bending				Bend		Grain		<u> </u>	Ovalized	<u> </u>		re/Forced
	Ш	Centre No	ot Concer	ntric to	o/s	BOM/Route		Hardwa	re	ļ_	Over/Under	tolerance		rature/Cure
}		Cracks				Broken/Damaged		Inspecti	on Incomplete	L	Part Incorre	ct	Weld	
		Crushed/	Crimped.			Burrs		-1	ions Incomplete/Unclear		Part Lost/M		Wrong	Stock Pulled
		Cuffs				Contamination		Mainte	nance		Part Moved			
		Heat Trea	it			Countersink		Mislabe	led		Positioned \	Wrong _		
		Inspectio	n Strip in	Tube		Cut Too Short		Misread	1		Power Loss/	'Surge	Other	
		Ripples in	Bend			Drill Holes		Offset						

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

Folio

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DART AEROSPACE LTD	Work Order:	99292
Description: Bolt	Part Number:	D3121-21
Inspection Dwg: D3121 Rev: E		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.375	+/-0.010	.375	1		5208	Vein
0.050 - 0.060	N/A	.055	/		1	
0.080	+/-0.010	.083				
10-32UNF3A	N/A	10-32 3A	/		U	
Major Diameter	Max: 0.190 Min: 0.184	.188	/	# · · · · · · · · · · · · · · · · · · ·	5602	Mile
Over wire	Max: 0.2146 Min: 0.2123	.2125	V		1.	

Measured by:

Date: 13-04-13

Audited by: Prototype Approval: N/A

Date: 13/64/14

Date: N/A

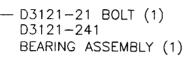
Rev	Date	Change	Revised by	Approved
Α	04.02.27	New Issue	KJ/RF	
В	06.03.09	Dwg Rev. updated	KJ/JLM	
С	06.06.14	Dwg Rev. updated	KJ/JLM	
D	08.01.16	Dwg Rev. updated	KJ/EC/DD, A	
E	08.07.23	Dimensions updated	KJ/DD ox	N/



(

DESIG	4	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHEC	KED	APPROVED	DRAWING NO. REV. E
	911	M	D3121 SHEET 1 OF 10
DATE			TITLE SCALE
07.1	11.07		BRACKET ASSEMBLY 1:2
Α		02.04.15	NEW ISSUE
В		03.01.16	ADD RIDGES; ADD MAT'L PROP; FIX P/N ADD -141/-143/-144/-145/-146
С		04.02.17	ADD CLEARANCE; USE -241 BEARING
D		06.05.17	D3121-25 CAP WAS 1.024, NOW 1.000
Ε	٠.	07.11.07	ADD TOLERANCE TO 0.032 (DETAIL B)

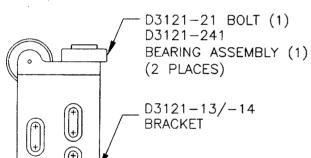
RELEASE



D3121-11 BRACKET

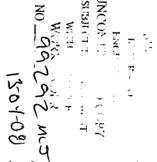
D3121-041 BRACKET ASSEMBLY

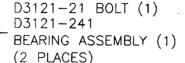
(REPLACES PREMIER P/N B30-23000-33)



D3121-043 (SHOWN) / D3121-044 (OPPOSITE) BRACKET ASSEMBLY

(REPLACES PREMIER P/N B30-23000-37/-38)





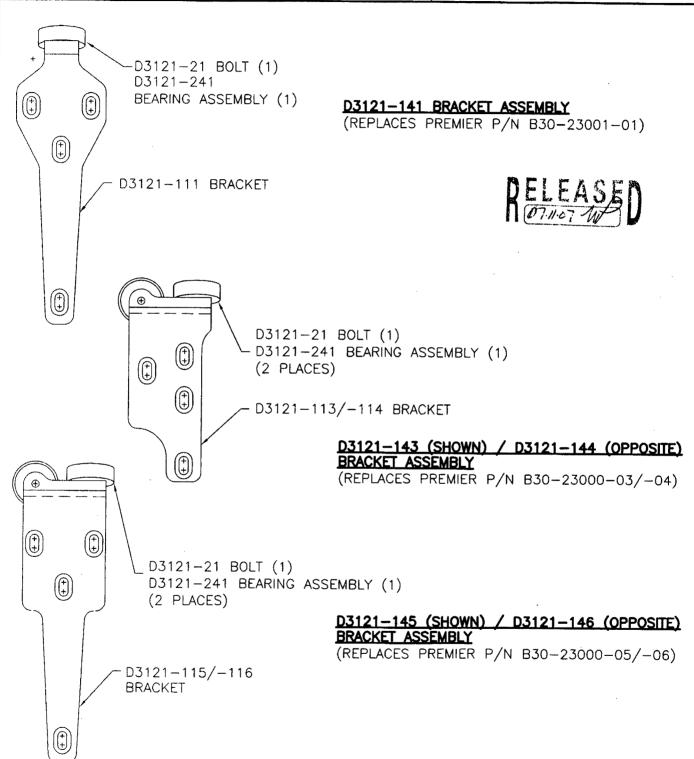
D3121-15/-16 BRACKET

D3121-045 (SHOWN) / D3121-046 (OPPOSITE) BRACKET ASSEMBLY

(REPLACES PREMIER P/N B30-23000-35/-36)



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CHECKED	APPROVED	DRAWING NO.	REV. E.
91		D3121	SHEET 2 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:2

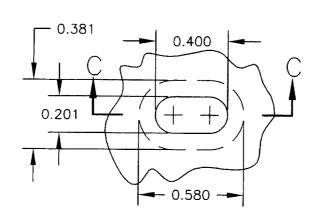


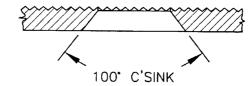
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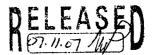
DESIGN	DRAWN BY	DART AEROSE HAWKESBURY, ONTAI	
CHECKED	APPROVED	DRAWING NO.	REV. E
L 94	-	D3121	SHEET 3 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:1

DETAIL A: SLOT DETAIL SCALE 2:1 VIEW ROTATED

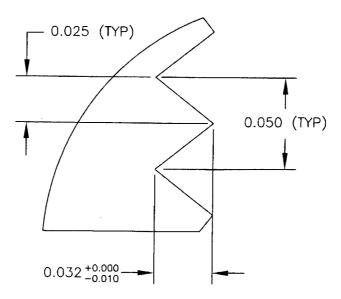




SECTION C-C

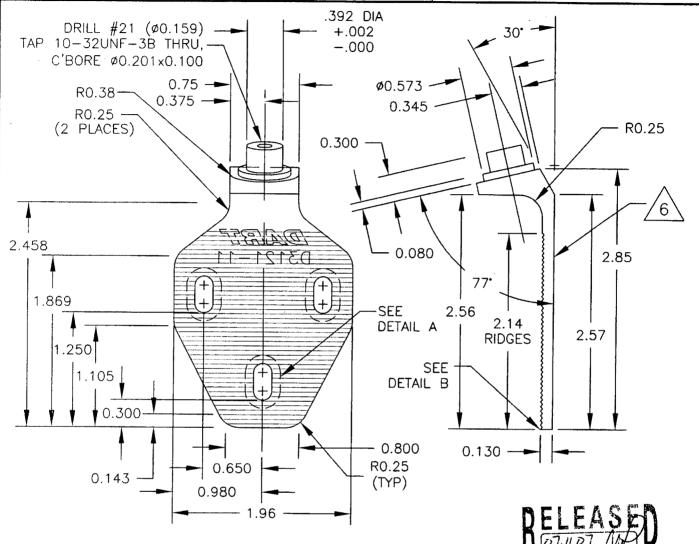


DETAIL B: RIDGE DETAIL PARTIAL SECTION SCALE 1:20





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#	-#	D3121	SHEET 4 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEM	fBLY 1:1



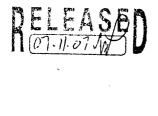
D3121-11 BRACKET

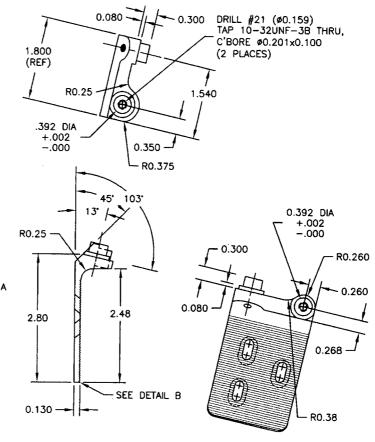
- 1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B) MIN ULTIMATE TENSILE = 150 ksi MIN YIELD TENSILE = 100 ksi
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N & LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

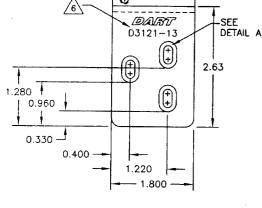
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CHECKED	APPROVED	DRAWING NO.	REV. E
91		D3121	SHEET 5 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:2







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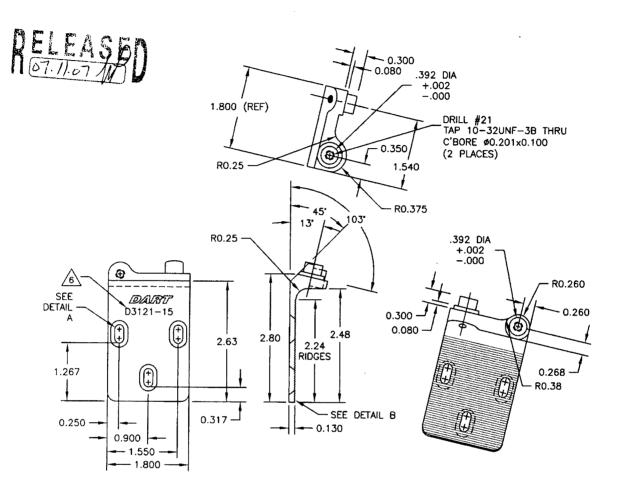
D3121-13 BRACKET (SHOWN) D3121-14 BRACKET (OPPOSITE)

- 1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
 MIN ULTIMATE TENSILE STRENGTH = 150 ksi
 MIN YIELD TENSILE STRENGTH = 100 ksi
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N & LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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91	9	D3121	SHEET 6 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:2



D3121-15 BRACKET (SHOWN) D3121-16 BRACKET (OPPOSITE)

- 1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)
 MIN ULTIMATE TENSILE = 150 ksi
 MIN YIELD TENSILE = 100 ksi
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N AND LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

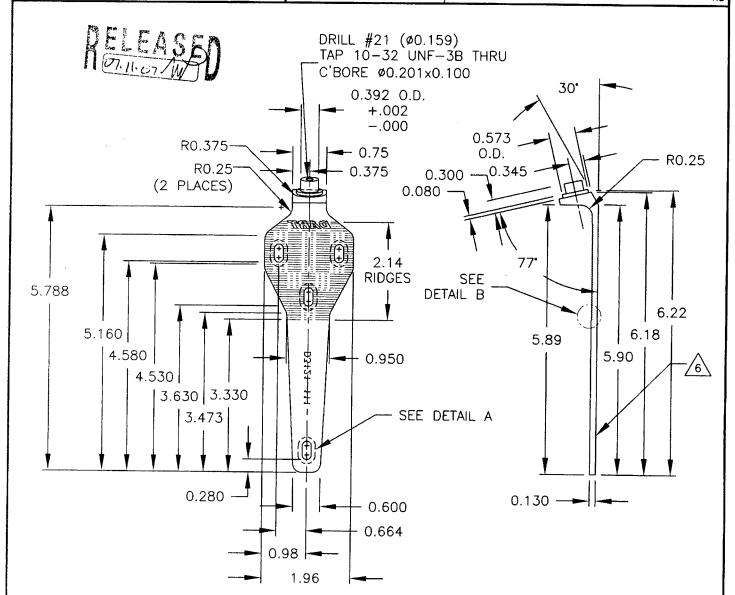
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44	-	D3121	SHEET 7 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:2



<u>D3121-111</u> BRACKET

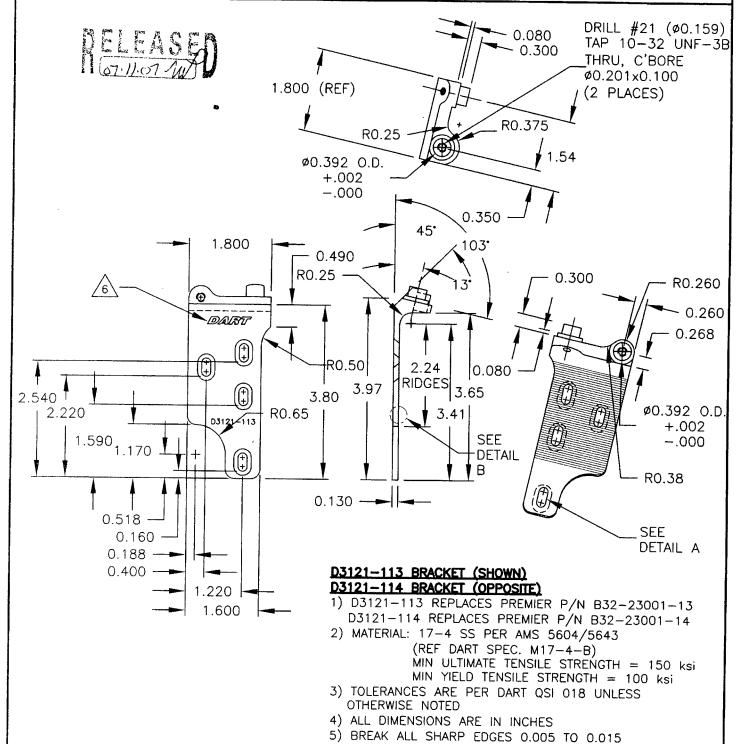
- 1) REPLACES PREMIER P/N B32-23001-11
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B) MIN ULTIMATE TENSILE = 150 ksi

MIN YIELD TENSILE = 100 ksi

- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHEWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
- 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005



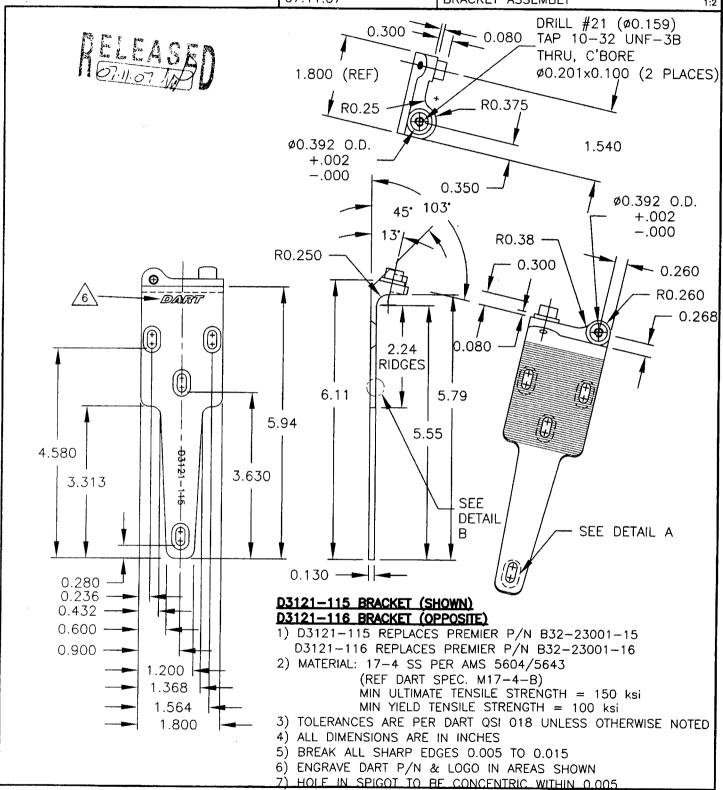
DESIGN #	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. E SHEET 8 OF 10
DATE		TITLE	SCALE SCALE
07.11.07		BRACKET ASSEMBLY	1:2



6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005



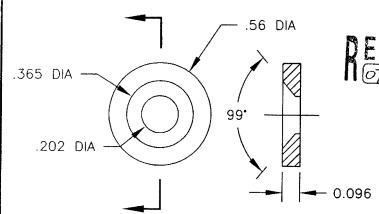
DESIGN #	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. E
711	TH.	D3121	SHEET 9 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:2



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	DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
	CHECKED	APPROVED,	DRAWING NO.	REV. E
	AH-		D3121	SHEET 10 OF 10
i	DATE		TITLE .	SCALE
	07.11.07		BRACKET ASSE	MBLY 1:1



D3121-17 WASHER (SCALE 2:1)

1) REPLACES PREMIER P/N B32-23001-17 MATERIAL AISI 303 SS ROUND BAR, ANNEALED

Major & . 184

Mow

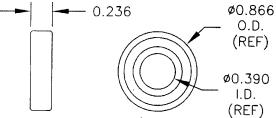
.212 . 214

CALINO .

.015 Ø0.390 I.D. (REF)

JNLESS

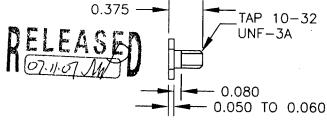
2) ALL DIMENSIONS ARE IN INCHES



D3121-23 BEARING (SCALE 1:1)

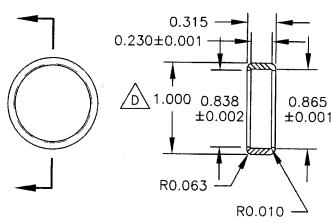
1) POSSIBLE SUPPLIER: SKF P/N 61900-2Z OR KML P/N 6900-ZZ

DIMENSIONS ARE IN INCHES



D3121-21 BOLT (SCALE 1:1)

- 1) MATERIAL: AISI 303 SS HEX, ANNEALED (REF DART SPEC. M303H0.500)
- FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015

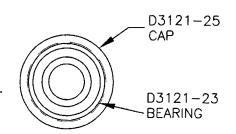


D3121-25 CAP (SCALE 1:1)

6000-2ZJ/EM 1) MATERIAL: DELRIN ROD, Ø1.25

(REF DART SPEC. M-DELRIN-R1.250)

- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES



BEARING ASSEBLY (SCALE 1:1)